NASA SBIR/STTR Technologies

Rayleigh/Mie Lidar for Non-intrusive Measurement of

Aircraft Air Data Parameters

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Description and Objectives

- Problem current aircraft air data probes suffer safety and performance problems
- Objective replace all air data probes with a non-intrusive, optical, remote-sensing probe

OPHIR Optical Air Data Concept Transceivers (mounted mutually orthogonal) Optical Fiber Computer Computer Laser head Laser source: narrow linewidth, tunable, UV pulsed laser Operation: Rayleigh/Mie laser-based radar (lidar) Light delivery: fiber-coupled

Approach

Laser scattering from air molecules and aerosols – works even when atmosphere is "clean"

Subcontractors/Partners

- The Boeing Company, Flight Test Div.
- Goodrich Aerospace, Sensors Division
- ❖ EADS(Airbus), Corp. Research Center

Schedule and Deliverables

- ❖17 months development effort
- 23 months flight test program end
- 24 months final report + hardware
 NASA & Commercial Applications
- ❖ NASA flight test sensors
- ❖ Military low observable aircraft
- Commercial flight test sensors